神经网络计算函数：

函数名：calculate(ANNnet,inputData)

ANNnet为要进行计算钢种，神经网络文件的名称

inputData 要求数据格式如下：

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| C | 0.3294 | 0.3271 | 0.327 | 0.334 | 0.3313 | 0.3272 | 0.3321 | 0.3335 | 0.3323 | 0.3329 | 0.33 | 0.3357 |  |
| MN | 1.032 | 1.053 | 1.043 | 1.044 | 1.032 | 1.036 | 1.046 | 1.028 | 1.033 | 1.045 | 1.047 | 1.052 |  |
| SI | 0.288 | 0.277 | 0.281 | 0.298 | 0.268 | 0.264 | 0.27 | 0.269 | 0.29 | 0.271 | 0.299 | 0.289 |  |
| NI | 0.03 | 0.025 | 0.024 | 0.029 | 0.027 | 0.026 | 0.028 | 0.03 | 0.029 | 0.026 | 0.026 | 0.025 |  |
| CR | 0.167 | 0.16 | 0.168 | 0.161 | 0.178 | 0.167 | 0.162 | 0.164 | 0.166 | 0.17 | 0.174 | 0.167 |  |
| TI | 0.0262 | 0.02841 | 0.02601 | 0.03032 | 0.0299 | 0.03172 | 0.02843 | 0.02953 | 0.02925 | 0.02674 | 0.0285 | 0.0254 |  |
| MO | 0.0108 | 0.0129 | 0.0094 | 0.009 | 0.0078 | 0.0058 | 0.0047 | 0.0047 | 0.0049 | 0.0042 | 0.0039 | 0.004 |  |
| B | 0.00215 | 0.00234 | 0.00235 | 0.00233 | 0.00226 | 0.0021 | 0.00212 | 0.00224 | 0.00225 | 0.00222 | 0.00236 | 0.00216 |  |

calculate.m文件，和各钢种神经网络文件应在同一目录下，否则要添加路径。

以1E0669钢钟为例：

神经网络所保存文件名：net1E0669,

inputData =

0.329400000000000

1.032000000000000

0.288000000000000

0.030000000000000

0.167000000000000

0.026200000000000

0.010800000000000

0.002150000000000

Mycal=calculate('net1E0669',inputData)

计算后：

Mycal =

52.703426709350929

52.696093045913777

51.836735976585516

51.618809928395365

50.615331976749694

50.510381794974812

48.675959026826185

48.692736508595701

47.742275644415457

47.631058323660902

38.820366553052025

38.952633980555881

31.992230157258749

31.746806969282950

27.860434927268539

27.627745955374163

23.499562084854823

23.520615076264829

19.352436900341939

20.050836084014229